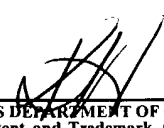




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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/898,338 | 07/03/2001 | Takahiko Terada | MTS-3268US | 2484 |
| | 7590 | 05/04/2004 | EXAMINER | |
| Allan Ratner Ratner & Prestia One Westlakes, Suite 301 P.O. Box 980 Valley Forge, PA 19482-0980 | | | PHASGE, ARUN S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1753 | |
| DATE MAILED: 05/04/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/898,338

Applicant(s)

TERADA ET AL.

Examiner

Arun S. Phasge

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/8/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-6 and 8-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-6 and 8-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

Claims 2-5, 8-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Futamura of record for reasons of record.

Claims 2-6, 8-16, 20-24 are rejected under 35 U.S.C. 102(a) as being anticipated by Ueno et al. (Ueno), EP 1008395 A2.

Ueno discloses the claimed method of treating the same materials comprising the steps of contacting the halogen-containing flame-retardant resin with ethylene glycol disclosed by the Ueno reference reads upon the dehalogenation promoting material (see page 12). The metals contained in printed circuit boards would read upon the dehalogenation material. The patent further discloses the treatment of similar materials (see page 12). The contact of the pelleted resin with the ethylene glycol would read upon the kneading of the mixture while applying shear force of claim 6 (see page 15, example 5). The Ueno reference discloses the removal of oxygen before the treatment (see page 12, lines 45-50). The treatment of chips of personal computers would provide the

limitation to separate the metal from the resin, since the treatment would dissolve the resin (see page 12, lines 1-11).

Therefore, since the Ueno patent discloses each and every limitation, the claims are anticipated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 6 and 25 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Futamura applied as of record.

Applicants argue that the grinding step of the Futamura patent would not anticipated kneading and shearing step, because the "kneading is carried out by a biaxial kneading extruder, a kneader or rotation rolls."

The use of a different apparatus to perform a functionally equivalent step would have been obvious to one having ordinary skill in the art at the time the invention was made, because such modification to use a functionally equivalent structure in a method would have been within the purview of the ordinary artisan.

As stated by applicants, the Futamura patent grinds the resin before heating. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the disclosure of the Futamura patent to combine the steps, because such combination of a sequence of steps into one step has been well settled to be within the skill of the ordinary artisan, unless such combination produces unexpected results.

Claims 17-19, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno applied as above.

Ueno does not disclose the recovery of the decomposed material, such as the styrene or bromine. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the disclosure of the Ueno

patent to recovery the material, because such recovery of the products would be economically beneficial rather than wasting the material.

Response to Arguments

Applicant's arguments with respect to claims 2-6, 8-25 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to the Futamura reference filed 1/8/04 have been fully considered but they are not persuasive.

Applicants argue that the since one of the components of the resin is styrene, then the method of Futamura is not anticipatory, because the temperature is above the thermal decomposition temperature of polystyrene.

The Futamura patent discloses a variety of resin materials, which do not include styrene, such as tetrabromobisphenol A (see col. 2, lines 23-43). Therefore, the claims remain rejected over the prior art of Futamura.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun S. Phasge whose telephone number is (571) 272-1345. The examiner can normally be reached on MONDAY-THURSDAY, 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Arun Phasge', with a large, stylized 'P'.

Arun S. Phasge
Primary Examiner
Art Unit 1753

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